Having thus described the preferred embodiment(s), the invention is now claimed to be:

1. A system **(10)** for inserting a medical device **(191)** into a patient, the system including an imaging device **(100)** scanning the patient to generate a volumetric image data set of the patient, a human readable device **(152)** for displaying an image of the patient derived from said volumetric image data set, means for selecting a virtual trajectory **(300, P)** defining a path for inserting the medical device **(191)** into said patient, robotic means **(190)** on said imaging device and movable into selected positions relative to the imaging device, and a guide apparatus **(200)** to direct movement of the medical device **(191)** relative to the patient **(20)** disposed on the robotic means **(100),** the guide apparatus **(200)** comprising:

a connector portion **(210)** coupling the guide apparatus with the associated imaging device **(100)** at a distal end of the robotic means **(190)**;

a main body portion **(220)** supported relative to the associated imaging device by the connector portion **(210)**;

a gripping area **(230)** formed at a first end **(222)** of the main body portion **(220)**, the gripping area **(230)** adapting the guide apparatus **(200)** for manual gripping by an associated operator; and,

a holding area **(240)** formed at a second end **(224)** of the main body portion **(220)**, the holding area **(240)** being adapted to hold the medical device **(191)** in an orientation suitable for motion relative to said patient **(20)** along a selected linear path **(P)**, the holding area **(240)** being operative to translate the medical device **(191)** along said selected linear path **(P)** in response to manual force applied by the associated human operator at said gripping area **(230)**.

2. The system **(10)** according to claim 1, wherein the imaging device **(100)** is a CT scanner, an MRI scanner, a CCT scanner, a fluoroscope, a SPECT scanner, a PET scanner, or a combination of the foregoing.

3. The system **(10)** according to either of claims 1 and 2, wherein the medical device **(191)** is an ablation probe or a biopsy needle **(192)**.

4. The system (10) according to any one of claims 1-3, wherein said means for selecting said virtual trajectory includes means for selecting a virtual target point (304) in said image of the patient by identifying a first coordinate in said image of the patient, and means for identifying a virtual path (306) extending from said selected virtual target point (304) and out from the body of the patient.

5. The system (10) according to any one of claims 1-4, wherein said robotic means (190) is adapted to move said guide apparatus (200) into a position whereat said medical device (191) is in an orientation suitable for motion relative to said patient (20) along said selected linear path (P) coincident with said virtual path (306) extending from said virtual target point (304) and out from the body of the patient.

6. The system (10) according to any of the previous claims, wherein said connector portion (210) of the guide apparatus (200) includes a one of a linear slide joint (260) and a prism joint (270).

7. The system according to any of the previous claims, further including:

a position feedback device (280) provided on said connector portion (210) of the guide apparatus (200) for providing a feedback signal indicating a position of the guide apparatus relative to the patient; and,

means for displaying an image of the medical device (190) as it is physically moved relative to the patient based upon said feedback signal, together with said image of the patient and said virtual path.

8. The system according to any of the previous claims, wherein the holding area (240) is formed of an x-ray transmissive material.

9. The system according to any of the previous claims, wherein the holding area (240) includes a set of tweezers-like arm portions (251, 252, 253) adapted to grip the medical device (191) in a V-shaped groove (254) formed by the arm portions.

10. A method of inserting a medical device (191) into a patient, the method comprising:

providing an imaging device (100) scanning the patient to generate a volumetric image data set of the patient;

providing a human readable device (152) for displaying an image of the patient derived from said volumetric image data set;

providing means for selecting a virtual trajectory (300, P) defining a path for inserting the medical device (191) into said patient;

providing robotic means (190) on said imaging device and movable into selected positions relative to the imaging device;

providing a guide apparatus (200) to direct movement of the medical device (191) relative to the patient (20) disposed on the robotic means (100), the guide apparatus (200) including a connector portion (210) coupling the guide apparatus with the associated imaging device (100) at a distal end of the robotic means (190); a main body portion (220) supported relative to the associated imaging device by the connector portion (210); a gripping area (230) formed at a first end (222) of the main body portion (220), the gripping area (230) adapting the guide apparatus (200) for manual gripping by an associated operator; and, a holding area (240) formed at a second end (224) of the main body portion (220), the holding area (240) holding the medical device (191) in an orientation suitable for motion relative to said patient (20) along a selected linear path (P), the holding area (240) being operative to translate the medical device (191) along said selected linear path (P) in response to manual force applied by the associated human operator at said gripping area (230); and,

inserting the medical device (191) into the patient by manually urging the guide apparatus (200) towards said patient.

11. The system (10) according to claim 1, wherein providing the imaging device (100) includes providing a CT scanner, an MRI scanner, a CCT scanner, a fluoroscope, a SPECT scanner, a PET scanner, or a combination of the foregoing.

12. The method according to either of claims 1 and 2, wherein the providing step includes providing an ablation probe or a biopsy needle (192).

13. The method according to any one of claims 1-3, wherein said providing means for selecting said virtual trajectory includes providing means for selecting a virtual target point **(304)** in said image of the patient by identifying a first coordinate in said image of the patient, and providing means for identifying a virtual path **(306)** extending from said selected virtual target point **(304)** and out from the body of the patient, and moving the medical device and apparatus **(200)** while performing said scanning of the patient.

14. The method according to any one of claims 1-4, further including, using said robotic means **(190)**, moving said guide apparatus **(200)** into a position whereat said medical device **(191)** is in an orientation suitable for motion relative to said patient **(20)** along said selected linear path **(P)** coincident with said virtual path **(306)** extending from said virtual target point **(304)** and out from the body of the patient.

15. The method according to any of the previous claims, wherein providing said connector portion **(210)** of the guide apparatus **(200)** includes providing a one of a linear slide joint **(260)** and a prism joint **(270)**.

16. The method according to any of the previous claims, further including:

providing a position feedback device **(280)** on said connector portion **(210)** of the guide apparatus **(200)** for generating a feedback signal indicating a position of the guide apparatus relative to the patient; and,

displaying an image of the medical device **(190)** as it is physically moved relative to the patient based upon said feedback signal, together with said image of the patient and said virtual path.

17. The method according to any of the previous claims, including forming the holding area **(240)** of an x-ray transmissive material.

18. The method according to any of the previous claims, wherein providing the holding area **(240)** includes providing a set of tweezers-like arm portions **(251, 252, 253)** adapted to grip the medical device **(191)** in a V-shaped groove **(254)** formed by the arm portions.